

Message

---

**From:** Froede, Carl [Froede.Carl@epa.gov]  
**Sent:** 4/14/2021 1:51:41 PM  
**To:** Amoroso, Cathy [Amoroso.Cathy@epa.gov]  
**Subject:** FW: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

Interesting... Need to read this first email from Courtney – please.

---

**From:** Courtney Thomason <Courtney.Thomason@tn.gov>  
**Sent:** Wednesday, April 14, 2021 9:14 AM  
**To:** Randy Young <Randy.Young@tn.gov>; Froede, Carl <Froede.Carl@epa.gov>  
**Subject:** RE: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

Carl and Randy,

The Creel survey referenced is conducted by one of our biologists, Dana Higgins. The bulk of her efforts have been focused primarily in the Clinch near White Oak Dam and up to the lower reaches of Poplar Creek. However, she has collected a little bit of data from the Bear Creek/Poplar Creek area recently.

I caught her on the way out the door to the field this morning, but briefly, she said that she interviewed some fishermen yesterday by the lower bridge, approximately 300 meters from the confluence of Bear Creek and Poplar Creek. They said they fish there frequently and fish for anything they can get.

Dana will compile any additional information that she has collected from this area and share with Randy and I once she gets back from the field in a few hours.

Because of budget restrictions until somewhat recently, she has been unable to collect the fish tissue samples originally proposed, but she will be collecting some of those in the new FY, though they will predominantly be focused in the Clinch River from White Oak Dam up into the lower reaches of Poplar Creek.

Courtney

---

**From:** Randy Young <Randy.Young@tn.gov>  
**Sent:** Wednesday, April 14, 2021 9:02 AM  
**To:** Froede, Carl <froede.carl@epa.gov>; Courtney Thomason <Courtney.Thomason@tn.gov>  
**Subject:** RE: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

Thx Carl. I am not familiar with any of that fish work. Maybe Courtney will know if someone from our monitoring group has been involved.

I just started looking at the SAP this morning. Hopefully, we will get DOE comments this week.

---

**From:** Froede, Carl <Froede.Carl@epa.gov>  
**Sent:** Wednesday, April 14, 2021 8:45 AM  
**To:** Randy Young <Randy.Young@tn.gov>; Courtney Thomason <Courtney.Thomason@tn.gov>  
**Subject:** FW: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)  
**Importance:** High

\*\*\* This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. \*\*\*

Good morning,

Cathy has been in communication with Steve Alexander with U.S. Fish and Wildlife (see below). She asked me to forward this email and attachment to you asking if any of the study data has been produced and reviewed by you? Please let Cathy and I know the answer to this question. Thanks.

Also, apparently some fishermen eat the whole fish (probably the smaller size?) and now we have a question regarding the limit of sampling to only fish fillets. I will have a comment about creating a subset of whole fish for radionuclide analysis and you can consider this too. Also, we want fish sampling at BCK-9.9 and upstream of the EMWMF.

I will have additional sampling comments to discuss tomorrow but not everyone from the team has provided me with their comments. So, all of EPA's comments will go out by email on Friday.

Thanks,  
Carl

---

**From:** Alexander, Steven <[steven\\_alexander@fws.gov](mailto:steven_alexander@fws.gov)>  
**Sent:** Tuesday, April 13, 2021 3:14 PM  
**To:** Amoroso, Cathy <[Amoroso.Cathy@epa.gov](mailto:Amoroso.Cathy@epa.gov)>  
**Cc:** Alexander, Shanna <[Alexander.Shanna@epa.gov](mailto:Alexander.Shanna@epa.gov)>; Froede, Carl <[Froede.Carl@epa.gov](mailto:Froede.Carl@epa.gov)>; Richards, Jon M. <[Richards.Jon@epa.gov](mailto:Richards.Jon@epa.gov)>  
**Subject:** RE: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

I found a TDEC-ORO monitoring proposal from 2020 - 2021 that references creel surveys from lower Bear Creek. I assume TWRA likely did the work but cannot locate those surveys on-line. I'm uncertain who the appropriate contact person with TDEC would be.

Average weight of a fish filet would be approximately 3 – 7 ounces (~84 – 165 grams) depending on overall size, weight, and length of the fish. Depending on the consumer, an average meal would likely be 2- 3 filets.

---

**From:** Amoroso, Cathy <[Amoroso.Cathy@epa.gov](mailto:Amoroso.Cathy@epa.gov)>  
**Sent:** Tuesday, April 13, 2021 11:22 AM  
**To:** Alexander, Steven <[steven\\_alexander@fws.gov](mailto:steven_alexander@fws.gov)>  
**Cc:** Alexander, Shanna <[Alexander.Shanna@epa.gov](mailto:Alexander.Shanna@epa.gov)>; Froede, Carl <[Froede.Carl@epa.gov](mailto:Froede.Carl@epa.gov)>; Richards, Jon M. <[Richards.Jon@epa.gov](mailto:Richards.Jon@epa.gov)>  
**Subject:** RE: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

Thanks for the quick response Steve!

Attached is the 2015 BMAP (published in 2016) report and part of the 2018 BMAP report. I've had a hard time finding all the annual BMAP reports, but will ask DOE to send links.

---

**From:** Alexander, Steven <[steven\\_alexander@fws.gov](mailto:steven_alexander@fws.gov)>  
**Sent:** Tuesday, April 13, 2021 10:50 AM  
**To:** Amoroso, Cathy <[Amoroso.Cathy@epa.gov](mailto:Amoroso.Cathy@epa.gov)>  
**Cc:** Alexander, Shanna <[Alexander.Shanna@epa.gov](mailto:Alexander.Shanna@epa.gov)>; Froede, Carl <[Froede.Carl@epa.gov](mailto:Froede.Carl@epa.gov)>; Richards, Jon M. <[Richards.Jon@epa.gov](mailto:Richards.Jon@epa.gov)>  
**Subject:** RE: [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

Cathy –

I'll take a look at this in greater detail but my first thoughts are to find a similar stream (size-discharge) in the Tennessee/Clinch watershed where TWRA has done creel surveys. That data could then be extrapolated; however, it would be nice to take a look at recent BMAP data from Bear Creek.

For bluegill and shellcrackers, I don't think the assumptions of the project team are necessarily realistic. I've attached a table of standard weight determinations of common species that may be in Bear Creek. Did the project team define where the 30g value came from? An estimate of filet weight from a specimen that weighed x with a length of y?

Your assumptions in #2 below are valid as fish would readily recolonize and they're constantly transiting a "defined" reach in search of prey/food. For a recreational user, wouldn't you need to utilize the most conservative values available? Species like shellcrackers are small and essentially cooked whole.

I'm currently in Knoxville (daughter just had a baby) and will get back with you. How's Carl Froede?

Steve

---

**From:** Amoroso, Cathy <Amoroso.Cathy@epa.gov>

**Sent:** Tuesday, April 13, 2021 7:47 AM

**To:** Alexander, Steven <steven\_alexander@fws.gov>

**Cc:** Alexander, Shanna <Alexander.Shanna@epa.gov>; Froede, Carl <Froede.Carl@epa.gov>; Richards, Jon M. <Richards.Jon@epa.gov>

**Subject:** [EXTERNAL] advice on DOE Oak Ridge fish population survey (Bear Creek, Oak Ridge, TN)

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Steve,

The EPA Region 4 federal facilities team is working with TDEC and DOE on a fish tissue sampling event and fish population survey in Bear Creek, Oak Ridge, TN. The larger issue is developing limits for radionuclides discharged from the on-site landfill (and future landfill) into Bear Creek. The state classifies Bear Creek for recreational use, and a recreational fisherman is the receptor of concern.

In estimating risk to a hypothetical recreational fisherman, DOE has asserted that the usual Clean Water Act defaults for fish consumption rates are not appropriate for Bear Creek and that the amount of fish a fisherman can catch and consume is limited by the number and size of edible fish available in the creek. (On 12/31/2020, Administrator Wheeler issued a dispute decision allowing the development of site-specific fish consumption rates for Bear Creek.)

Glenn Adams suggested I reach out to you with a couple of questions we are trying to pin down (below). Please let me know if you have time to discuss. We really appreciate any guidance or suggestions you can provide.

- 1) The project team is assuming a recreational fisherman would eat fish that are 30 grams and larger, and would not consume fish smaller than 30g. Is this a reasonable assumption? (Analysis of fish tissue for radionuclides will be limited to the filet/muscle portion of the fish.)

- 2) DOE/UCOR will collect fish in a 1km stretch of creek, by electroshock, and inventory the number, species, size, etc., of the fish (same as the method used in the BMAP program). We've asked for clarification about how the resulting data will be "converted" into an annual fish consumption rate for a recreational fisherman. Verbally, the answer provided is that the number of >30g fish collected during the shocking event will represent all the fish available for consumption for a year. In other words, if 6 fish of edible size are collected during the electroshock event, DOE will assume a recreational fisherman will consume 6 fish in a 1-year period. Is this appropriate? Seems to me that other fish would colonize the area once the larger fish are removed, and that there would be additional fishing opportunities in a year period. How would you advise to extrapolate this type of population survey to an annual consumption rate?

Thank you!

Cathy Amoroso, Chief  
Restoration & DOE Coordination Section  
Superfund & Emergency Management Division  
U.S. EPA, Region 4  
404-295-6758